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SPECIAL ARTICLES

A REVIEW OF SOME OF THE RECENT WORK
ON THE DIAGNOSIS, PREVENTION AND
TREATMENT OF DIPHTHERIA

J. G. FITZGERALD, M.D., F.R.S.C.

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A Review of some of the Recent Work on the Diagnosis, Prevention and Treatment of Diphtheria

By J. G. FITZGERALD, M.D., F.R.S.C.

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Continued from last month

The serum treatment of diphtheria introduced by Behring (1890) and first shown to be of extraordinary importance by Roux and Martin in 1894, is one of the pre-eminent achievements in the domain of medical science. Recent advances have been chiefly significant in demonstrating how diphtheria antitoxin can be more effectively applied in the reduction of mortality and morbidity. The importance of early administration of antitoxin has long been known. The fundamental work of Donitz (1899) who showed that antitoxin is capable of dissociating toxin which is only loosely bound to body cells, if the time during which the toxin has been in contact with the cell is not too extended, has recently been the starting point of further work by Bieling and Gottschalk.* The results of clinical treatment of diphtheria seem to harmonize very well also with the experimental view that the curative action of diphtheria antitoxin is in inverse proportion to the duration of the disease before treatment is begun.

*These authors recently (1923) have shown among others things, that, in animals given large injections of toxin, three phases in the subsequent developments may be observed. During the first, concentration of toxin occurs in certain organs, notably the spleen; this is followed by elimination in the urine (but none in bile or through the intestines) and finally a fixation by body cells of the balance of the toxin which has neither been eliminated nor can be extracted from organ emulsions. The fraction of the injected toxin which cannot be recovered or accounted for except in this way is very considerable. They think that toxin elimination, loose-binding and firm fixation may indeed, be proceeding synchronously. They believe (although they have not advanced experimental proof to substantiate it) also that the firm binding of toxin to body cells which follows the loose-binding cannot be disrupted, that is, such "firm bound" toxin cannot be inactivated.

The observations of Morgenroth and Levy (1912) in reference to the variation in concentration of antitoxin in the blood depending upon the route of injection, as well as those of Henderson-Smith (1907) upon the absorption of antitoxin in the body, have been of very great practical importance. Add to these the experience of Park and his colleagues and certain very clear-cut conclusions emerge—these are:—The day of the disease on which treatment is begun, the mode of administration of antitoxin and the size of the dose are the important considerations which will determine the ultimate outcome in every case of diphtheria. Evidence shows that intravenous administration yields most prompt results. If, however, it cannot be resorted to, intramuscular injection should be carried out, and if possible the subcutaneous route should no longer be deemed suitable.

The question of the size of the dose to be administered has naturally given rise to much difference of opinion. The amount necessary in any given case cannot be ascertained with experimental exactitude. Indeed the clinical experience and judgment of the physician will largely determine whether a single or multiple dose will be given. Admittedly a single adequate dose at the earliest possible moment is the ideal procedure. But let us assume that a dose which the physician believes (he cannot know) is an adequate one proves not to be, then of course a further dose must be given.

Apart then from the considerations emphasized by Dönitz, we are compelled to abide by the results of clinical experience as to what is a suitable dose. Quite likely better results are obtained now than was the case in the early days of serum treatment when the doses were small and possibly inadequate. The tendency to give much larger doses has spread and many of the leading clinical authorities on the subject on this continent give enormous doses in certain cases. Park may be regarded as an advocate of moderate doses. His 1921 recommendations are shown in the following table:—

TABLE I.
ANTITOXIN UNITS TO BE GIVEN IN THE VARIOUS TYPES OF CASES

	Mild cases	Early moderate.	Late moderate and early severe.	Severe and Malignant.
Infants 10-30 lbs. in weight; under 2 years	2,000-3,000	3,000-5,000	5,000-10,000	7,500-10,000
Children 30-90 lbs. in weight; under 15 yrs.	3,000-4,000	4,000-10,000	10,000-15,000	10,000-20,000
Adults 90 lbs. and over in weight	3,000-5,000	5,000-10,000	10,000-20,000	20,000-50,000
Method of administration advised	Intramuscular	Intramuscular	Intravenous	Intravenous

Park has stated that larger doses than those indicated are unnecessary, and can do no good. On the other hand, Bie, who is Physician-in-Chief to the Blegdsam Hospital in Copenhagen, in a recent article has summarized his experiences and has concluded that very large doses are of value in certain cases, especially if part of the first dose is given intravenously and the balance by intramuscular injection.

Bie gives the following data in regard to the dosage employed by him:

a. "Patients with slight membrane get no antitoxin."

b. "Patients with membrane of < 'medium extent' receive 4,000 to 8,000 units on admission. The injection is not repeated on the following days unless the membrane spreads."

c. "Patients with membrane of 'medium extent' receive 16,000 to 20,000 units when admitted. The injection is not repeated on the following day unless the membrane spreads."

d. "Patients with membrane of > 'medium extent', under 10 years get 30,000 units on admission and when over 10 years, 40,00 on admission. If the membrane has not decreased the next day, the same dose is repeated."

e. "Patients with 'extensive' or 'more extensive' membrane, under 10 years, 80,000 units on admission and 12-24 hours later 60,000 units, another 12 hours later 20,000 units, making a total of 160,000 units."

"When 10 years old or over 100,000 units on admission, 12 to 24 hours later 80,000 units and again 12 hours later 40,000 units, making a total of 220,000 units."

"Whenever possible 20 c.c. of the first dose of antitoxin is given intravenously to patients of groups d. and e. (> 'medium extent', 'extensive' and 'most extensive' membrane). Apart from this, intramuscular injection only is employed because the antitoxin injected intramuscularly on admission renders a later intravenous injection superfluous."

Bie has compiled the following table to show the results obtained by him:—

TABLE II.

In 1896, 1900, 1908, 1915.....	were treat.	2648	pat. of whom	69	died—	2.6%
In 1916.....	" "	657	" "	10	" "	—1.5%
In 1917.....	" "	869	" "	23	" "	—2.6%
In 1918.....	" "	968	" "	14	" "	—1.4%
In 1919.....	" "	1497	" "	23	" "	—1.5%
In 1920 and Jan.-Feb., 1921.....	" "	2342	" "	21	" "	—0.9%
From 1st Sept., 1920-28th Feb., 1921	" "	1341	" "	10	" "	—0.7%

In order to show that these results are not due to the fact that a much larger proportion of mild or less severe cases were under treatment the following table is presented by Bie:—

TABLE III.

CURED AND FATAL CASES TOGETHER
 ("Three groups in which the fatal cases exclusively arise")

	No. of patients	Group I	Group II	Group III
1896-1915.....	891	3.5%	36.5%	60%
1916-1917.....	434	4.1%	45.2%	50.7%
1918-1919.....	556	6.1%	30.6%	63.3%
1920 and Jan. and Feb., 1921.....	553	9.8%	30.6%	60%

(Group I. Membrane or more than "medium extent";

Group II. "Extensive" membrane;

Group III. "Most extensive" membrane.)

This observer continues:—"The state of affairs is, therefore, that while the incidence of diphtheria has increased in extent and severity the mortality has fallen considerably in that year in which very large doses of antitoxin were given and particularly in the last half year when they were administered most consistently, in spite of the fact that the majority of the worst cases were treated in that half year".

Bie concludes as follows: "With very large antitoxin doses, therefore, we have succeeded"

1. "In entirely avoiding death as a consequence of paralysis of respiration." 2. "In reducing the mortality to less than a third of what it was on an average in the years 1896, 1900, 1908 and 1915. Apart from the most severe, extremely toxic cases, diphtheria is reduced to being a disease almost without danger by this improvement in the treatment, and the mortality even of the most severe cases has fallen from 52% in the four control years to 22% in 1920 and the first half of 1921." Bie also agrees with Friedmann (1922) that paralysis and delayed death can be almost entirely prevented by the use of these large doses.

Madsen has critically examined these results and in his Harben lectures published in March, 1923, wrote:—"All reservations being made in regard to the application of the available material, it seems warrantable to consider it as an established fact that by application of very large doses of serum, partly intravenously, (up to 200,000 units and more) our Blegsdam hospital has succeeded in reducing the mortality to a rate lower than previously seen, that is, has succeeded in saving the lives of some severely attacked patients who would have died if they had not been subjected to such intensive serum treatment".

Madsen carried out certain experiments in connection with the clinical studies of Bie and he believes in consequence that what is observed is "an actual curative process, a neutralization of toxin which has already

been bound in the organism". Madsen of course, as well as Bie, recognizing that even huge doses of antitoxin are ineffective when the firm union of toxin and cell has been established, and irreparable damage done before the administration of any antitoxin.

Bingel in 1918 published a paper in which he gave the results of the treatment of one series of cases of diphtheria with antitoxin and another with normal horse serum. This "normal" serum was not tested, however, for the presence of natural antitoxin. Bingel claimed that no difference in the results obtained could be observed. Meyer (1920), Herzfeld (1919), Feer, Albrecht, Czerny, Brhoff, Rozokski, Schwendenbecher and Joannovics have been unable to substantiate Bingel's conclusions.

Prevention of diphtheria:—It is possible here to consider only certain aspects of the subject of *specific* prevention of this disease. Purely administrative measures as well as those of a surgical character, (as in the treatment of carriers) will not be dealt with. Effective methods for the control of any communicable disease, through specific immunization depend upon two sets of factors. In the first, questions as to the certainty and simplicity of the immunizing method are of the utmost importance; and in the second are involved those considerations which may inhibit entirely, or largely nullify, the efforts of those responsible for the widespread employment of the method. No one competent to express an opinion can question the absolute necessity for, and the established value of, vaccination in the control of smallpox. It is equally evident, however, that this most important measure is becoming not less, but year by year, more difficult to apply in very many communities. These facts are of more than academic interest. Every physician and public health authority has to face them squarely. Very early in the development of serum therapy in diphtheria the possibility of passive immunization by the injection of diphtheria antitoxin was shown, first by Behring in 1890, and since that time by many others. The inherent limitations in this method of specific prophylaxis have been multiplied as the years have gone by until now some authorities would practically exclude it as a weapon of defence against this disease. Doull and Sandidge (1924) in a statistical study made in Baltimore, have shown that this may be a mistake. In a careful investigation of secondary cases of diphtheria occurring in contact groups where passive immunization was or was not practised, they have found that in the second group 10 per cent of the family contacts developed diphtheria, as against 1.2% among those who had received a prophylactic dose of diphtheria antitoxin. It is probably desirable to continue to use all known defensive weapons against this disease and not certain select ones.

Abel in 1894 demonstrated the presence of natural antitoxin in the blood of man. We are still, thirty years later, uncertain as to: (1) How this develops, (2) Why there are such extreme variations in the natural antitoxic content of different individuals living under the same general environmental conditions, (3) The possible fluctuations in the natural antitoxic content of those with either a very slight, or a considerable quantity. Very soon after Abel published his findings it was shown that natural antitoxin was also present in certain secretions, such as milk, and could be transmitted through this, to offspring. It was also found that placental transmission in human beings could take place. The greatest progress in our knowledge of this subject has been consequent upon Römer's (1909) development of a relatively simple technique for the demonstration of small quantities of antitoxin, and Schick's application of this in 1913, to man himself. Since that time much has been learned.

In addition to the above methods one other must be noted. Kellogg, (1922) has suggested on the basis of Römer's procedure a very useful modification by means of which susceptibility or immunity can be shown by combining with a $1/300$ L + dose of toxin, a small amount of patient's serum, injecting the mixture intracutaneously into a guinea-pig, thus revealing the presence or absence of $1/30$ of a unit of natural antitoxin in each c.cm. of serum. No "pseudo", or "paradoxical" reactions are encountered in using the Kellogg method.

While we are not yet in possession of facts as to the possible fluctuations in the natural content in the same individuals of various age groups, of different social grades and living under very different environmental conditions, we have considerable data on other points. Von Gröer and Kassovitz (1915-19) in a series of studies have investigated the incidence of natural antitoxin. This is shown in the following figure:—

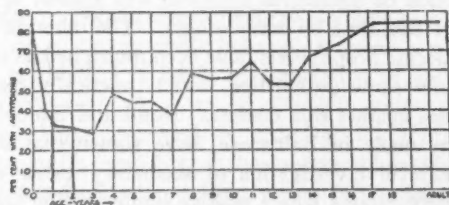


FIG. I. v. Groer and Kassovitz's curve of incidence of natural antitoxin at different ages.

The estimation of various quantities of natural antitoxin by exact measurement is very laborious and time-consuming. In consequence our ideas as to the content necessary to provide natural immunity, (which is

very generally believed to be the result of the possession of such natural antitoxin) are based largely on the results of Schick tests. A few investigators, however, have ascertained the exact antitoxic content in Schick negative individuals. Schick himself (1913) found that natural immunity as revealed by a negative Schick test, is the result of the presence of 1/30 unit (or more) of antitoxin. Kolmer and Moshage in 20 Schick negative individuals found 1/20 of a unit or more, while 10 Schick positive reactors had 1/40 of a unit or less. Previous to the employment of the Schick test for this purpose, Behring (1914) expressed the view that from 1/100 to 1/20 of a unit would confer protection. It seems that the Schick test as carried out by different workers may reveal from 1/40 to 1/60 of a unit of antitoxin. (Andrewes, Bulloch, et al). Bieber in 1921 found 1/20 of a unit per c.cm. protects guinea-pigs against one fatal dose of toxin. The most elaborate comparative study is that of V. Gröer and Kassowitz, and their results are shown in the following table:—

TABLE IV

Age	No. tested	Per cent. without antitoxin (Römer's method)	Per cent. positive to Schick's reaction	Difference
0	143	16	4.9	+11.1
3 months	57	29	28	+ 1.0
6	30	44	43	+ 1.0
9	32	60	59	+ 1.0
12	68	68	70	- 2.0
2 years	54	69	72	- 3.0
3	50	72	74	- 2.0
4	60	52	53	- 1.0
5	50	56	66	-10.0
6	52	56	63	- 7.0
7	58	63	72	- 9.0

In this series V. Gröer and Kassowitz did not use heated toxin controls in the performance of the Schick test. In consequence of this, the positive results above the age of 4 years are probably too high, there being included with the positives, a number of "pseudo" or "paradoxic" reactions. The same results are shown in the following figure:—

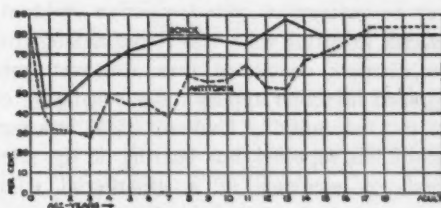


FIG. II. Curves showing the incidence of antitoxic immunity at different ages according to Schick's test and antitoxin estimations.

The table on next page has been compiled by Andrewes, Bulloch, et al, to illustrate the proportion of Schick positive individuals at various ages.

Practically all the estimations of natural immunity either by direct determination of content or by the Schick test have been made upon special groups in the community, namely, persons attending out-patient clinics, inmates of institutions, or school-children, and are therefore not necessarily truly representative of the population as a whole.

The important question as to the constancy of the immune state as revealed by the Kellogg or Schick tests cannot yet be answered. While authentic instances of Schick negative individuals developing diphtheria are not common, it has been observed. Naturally the intensity and frequency of exposure to infection will determine whether the antitoxic barrier can be broken down. The conversion of susceptible into immune individuals is presumably going on at all times in communities where diphtheria is prevalent. We may infer this from the variation in the percentage of immune persons in different age-periods.

Glenny and Südmersen in 1921, as the result of a most interesting experimental study, have postulated what they call "primary" and "secondary stimulus" effects to explain the development of antitoxin under natural and experimental conditions in man and animals. By primary stimulus is meant the first invasion of diphtheria bacilli or the initial elaboration or injection of toxin. After application of the primary stimulus only slight immunity develops. This may come about slowly and be more or less transient. After an attack of diphtheria in certain cases this is observed in the slow development of a little antitoxin which soon disappears. After the application of a secondary stimulus however, (whether this be natural infection or artificial immunization) there is a rapid development of antitoxin, which appears in much greater concentration and is more apt to persist. It is of course to be remembered that considerable individual variability exists in respect of the degree of response to either the primary or secondary stimulus as is seen in all immunity reactions.

Zingher in 1921, as a result of statistical evidence which showed a very much higher percentage of Schick-positive children among those less exposed to chance infection than was found among children living in overcrowded slum districts, concluded that antitoxic immunity is due to slight, unrecognized infection among those constantly exposed. This he designates "contact immunity". Dudley (1923) in a very illuminating epidemiological study has supplied data bearing on the relationship existing between periods of residence in a diphtherial environment, immunity to diphtheria and outbreaks of the disease. This work was done

in a boys' school in which there had been two outbreaks of diphtheria. In all, 831 boys were tested by the Schick method. Some of the boys had been in the school for 4 years, others for only a few months. The "new" boys had a much higher percentage of susceptibles than the "old" boys. On the basis of results obtained among 67 "new" boys and 15 "old" boys, Dudley concluded that 45% of boys who entered the school were Schick-positive, but after 10 months exposure in a diphtherial environment 90% of the positive reactors became negative reactors, although they did not have recognized diphtheria during that period. During the whole of the ten months however, diphtheria cases and carriers were recorded in the school. Thus the effect of a known diphtherial environment was to increase the percentage of immunes and Dudley believes that this was due to unrecognized "larval" infection occurring during the outbreaks. These results are shown in the following figure:—

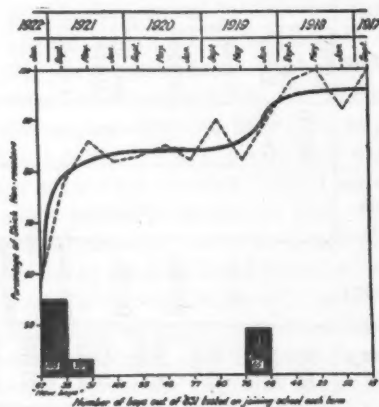


FIG. III. Relation between period of residence, Schick reaction and diphtheria outbreaks (shaded rectangles on bottom line represent duration and density of diphtheritic infection. The numbers of cases of these rectangles include carriers of morphological diphtheria bacilli as well as clinical diphtheria cases).

The interpretation of the Schick test in individuals over 14 years of age and in adults is often difficult. This is due to what is known as "pseudo" or "paradoxic" reactions. This may make it necessary in such persons to test the actual (antitoxic) content. However, a more interesting feature of these reactions is their relationship to diphtheria immunity. This is shown in the following figure taken from V. Gröer and Kassowitz:—

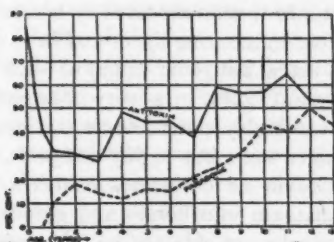


FIG. IV. Curves showing the relation between the incidence of natural antitoxin and paradoxical reactions (v. Groer and Kassowitz: corrected to exclude serum reactions).

Zingher and others have also observed that a higher percentage of "pseudo"-reactions are found among immunes than among susceptibles. V. Gröer and Kassowitz's explanation of this important fact is that a "pseudo"-Schick or "paradoxical" reaction is an expression of previous sensitization by diphtheria bacillary substance derived from infection. That is, a "paradoxical" reaction means previous exposure to infection. "Paradoxical" reactions can, however, be produced by the injection of broth (Kolmer and Moshage) typhoid bacilli and heated toxin as well as by diphtheria bacilli. (V. Gröer and Kassowitz and Opitz, 1921). From this it would appear that the bacterial sensitization is non-specific. As already pointed out, the reaction is not observed in guinea-pigs. It apparently does not occur in children under 1 year of age. In addition to antitoxic immunity, Solis-Cohen, Heist and Solis-Cohen (1920) have observed an antibacterial immunity.

Active immunization of man against diphtheria was first suggested by Theobald Smith in 1907. The definite statement that neutralized mixtures of toxin-antitoxin would be suitable for this purpose was made by the same investigator in 1909. According to Bordet, Babes first made this suggestion in 1898. Von Behring in 1913 seems, however, to have been the first to actually prepare such mixtures for use in human beings. Others before him had tried toxin alone, in isolated instances. It is to Park, Zingher, Banzhaf and their colleagues that the greatest credit must be given for work in this field. From 1914 to 1922 thousands of children have been actively immunized with toxin-antitoxin mixtures of varying toxicity. There are definite indications that the toxicity of the mixtures can be much lower than it was in those first used, and satisfactory results still be attained. In a recent publication Schroeder and Park (1923) have set forth results obtained with toxin-antitoxin mixture having $1/30$ of the $L +$ value of their original preparations. Just recently too (October, 1923), Glenny and Hopkins have proposed the

use of "toxoid" (aged toxin further modified by treatment with formalin) and antitoxin as an active immunizing agent and have also outlined a new method for testing the actual antigenic values of such mixtures.

Most recently Ramon (1924) in a very interesting communication has suggested the use of highly potent toxin, so modified by heat and formalin that is no longer toxic but highly antigenic, as an immunizing agent. This modified toxin he designates *anatoxin*. Some results of the injection of this anatoxin into horses and guinea-pigs are given by Ramon and if similar results are obtained by other workers it is possible that a most important advance has been made. An absolutely innocuous but still highly antigenic immunizing agent, capable of being accurately tested in laboratory animals, is essential. If Ramon has succeeded in this endeavour, as he apparently has done in evolving an "in-vitro" method of testing antitoxic values, he is to be credited with the two most important and significant contributions to knowledge made in this field during the past 15 years.

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Problems of Rural Communities

By J. J. MIDDLETON, M.B., D.P.H.,
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LIFE in the rural districts of Canada at the present time has many problems. There is much sympathy to be felt for the hundreds of families who yearly leave the farm or village and come to seek the comforts and conveniences of the city. Country life in Canada does not in these days offer sufficient attractions even to those most suited for farming, on account of the loneliness and monotony of existence coupled with the scarcity of labour, and domestic help. The latter conditions often make life on Canadian farms a continuous drudgery for both men and women. Not only is the scarcity of farm and domestic help a serious problem, but the lack of conveniences in the home makes matters worse, and brings extra and unnecessary toil to the women folk.

In the case of families where there are infants and young children, one can readily see how great a menace this state of affairs is to child welfare, and yet the rearing of healthy children is one of the most important features of family life no matter where one's lot may be cast.

Leaving out the question of the motor car which is rapidly taking its place as one of the chief conveniences of farm and rural life, the lack of local amusements, or a social centre, is a great objection which could well be eliminated. While some enterprising rural districts have already experimented successfully with the community centre, there seems no reason why every village or farming section could not provide such an attraction as would enable the young and old to enjoy together the social amenities that pertain to larger centres of population. Why should it be left to the towns and cities to offer all the attractions, and our villages deny their young people the cultural and higher education facilities for which they crave?

Why should our young people from the country be allowed to drift to the cities, there to be described perhaps as "rubes" or "country bumpkins" by overdressed "smart alexs" of little refinement, when provision could be made in rural districts for all the requirements of the best society? As regards environment for character building, do the senseless frivolities of city life compare with the healthful surroundings of nature, or as one writer describes it "with the peaceful evening glowing, the cattle grazing, the birds twittering, the flowers blooming, the sweet

pastoral landscape yielding to the tender dark". To the youthful temperament always in quest of excitement and adventure, natural attractions, however, are not enough, and one has only to notice the group of young men sitting aimlessly at the village corners during the summer evenings, to realize that sooner or later the white lights of the city will prove an irresistible lure.

Reading rooms, tennis courts, baseball ground, sports programmes at regular intervals, and a gymnasium with shower or swimming baths are all necessities, and the money required for these expenditures would be more than compensated for by the larger permanent population of the neighbourhood and the greater happiness of the people. During winter, in addition to baths and gymnasium, a well-heated and ventilated building having a number of rooms suitable for cards or other games could be provided, a library of books, current magazines and periodicals, as well as a large hall to be utilized either for dancing or for debating societies, concerts, amateur theatricals, etc. Travelling cinema shows have also proved an attractive drawing card, and the facilities for debates afford an opportunity for the people to express their opinions on all topics of interest whether local or general. In many cases these meetings have formed the nucleus of a citizens' committee who take a pride in furthering the interests of the village or district in every possible way. Good roads, sanitation, the general health and well-being of the people, all come under discussion at such meetings, and good results invariably follow. A horticultural exhibit or a flower show now and then, might also be arranged to the advantage of everybody, while an added attraction for the mothers could be provided in the form of a weekly clinic conducted by one or more of the local physicians in the interest of maternal and child welfare. At such a meeting the feeding of infants and general upbringing of the young would prove topics of discussion that could not fail to be beneficial. These are only suggestions that might easily be improved upon, the object being to counteract the daily grind in the field or home with little of interest to look forward to after working hours, and the monotony of the work itself, which dulls ambition and makes many a young man or woman long for the giddy whirl, where in the language of the street there is "something doing" all the time. Many people in the country cannot enjoy even an evening game of cards, so tired are they from the labours and worries of the day's work, and often-times their lack of interest in outside affairs makes them ignore the newspapers.

One cannot adequately appreciate the value of the telephone to those who live in isolated spots. It has even been observed that there is a higher state of mental development among the children in homes provided

with telephones, as compared with those homes not so fortunate. This again would indicate that the mere privilege of communicating more readily with one's fellows tends to brighten the intellect and promote the contentment of those who can avail themselves of up-to-date devices such as the telephone. Moreover, since telephones have become common in the farm-houses of the prairies and the far-removed camps of the great northwest, there has been a tremendous decrease in nervousness and insanity among the womenfolk who were confined to the house weeks on end without having even a chance to gossip with a woman friend. To such as these the meetings of the Women's Institutes have proved an incalculable boon. It is only quite recently that the work done by these splendid organizations is being properly appreciated.

Of course among the better class of country and farm houses many necessary conveniences are now installed. But in those houses where the people are of the settler class and struggling to get their finances on a substantial footing, there are often just the bare necessities of life. The homes of these settlers are now scattered all over the country, and their numbers have increased rapidly since the war, and are still increasing as the land settlement schemes of the Government are materializing. Most of these families are of good sturdy British stock and the very kind of settlers this country needs.

In addition to the provision of community interests, some means must be suggested to relieve the mothers from the drudgery of housework, and allow her time to look after the health and physical development of her children. Even infant feeding, the most important factor in the first few months of the child's life—is not carried out scientifically in the case of bottle-fed babies. The mothers often do not know how to feed the child, and when they have some scientific knowledge, there is little time to put it into practice on account of the round of duties from dawn to dusk. Some women even start the early morning work by bringing in the cows and milking them, after which breakfast has to be prepared, not only for the family but also for hired men working on the farm. Meanwhile, the children have to look after themselves as best they can. The welfare of the future generation demands a remedy for this state of affairs and a good start has been made in one direction by the appointment of public health nurses in various rural districts, who are giving advice and help to mothers in the feeding and general upbringing of children and the reduction of infant mortality. As the number of these nurses increase, so will the general health and physique of the younger generation improve, and the health of the mothers will correspondingly be benefited on account of the advice and supervision offered.

As regards the problem of reducing household fatigue and eliminating unnecessary work in the home, a building expert should be available whose advice could be sought by all dwellers on farms, in backwoods, lumber camps, etc. One of the principal duties of this official would be to advise and supervise as regards the arrangement of the kitchen, pantry, etc. At present there is a lack of method in the arrangement of the cooking stove, kitchen table, sink, pantry, cupboards, etc. In her daily round of work the woman of the house could be saved a lot of useless walking about if the various features of the kitchen were arranged in such juxtaposition that, for instance, she could get from the baking table to the stove with the fewest number of steps, and that the pantry where the baking materials are kept is convenient to the table and that the sink is so situated that the dishes can be conveniently got to it from the table when the meal is finished. Moreover, the height of the table and sink should be carefully adjusted. A working surface that is too low or too high causes unnecessary fatigue. In the baking of such a comparatively simple thing as a pie, a methodical arrangement of the kitchen furniture can cut in half the number of steps the woman has ordinarily to take for the task. Having shelves near the stove, for instance, is even more convenient than having a large-sized pantry. One would hardly believe off-hand that the contrast in two kitchens should be so marked, and yet I have seen one arranged hodge-podge and the other methodically. The lessened amount of work that has to be done in the latter case is astonishing.

The question of electric power is as important to rural Canada as sunshine is to growing flowers. The comfort and convenience of electric washing machines, electric irons, toasters, etc., for farm houses in the country, in mining camps, etc., cannot be overestimated. Could such a boon be brought about it would revolutionize country life all over this great Dominion. If a competent League of Nations can be formulated to take care of international affairs and allow nations to utilize the enormous grants formerly used for offensive and defensive purposes, in bringing the products of science and civilization within reach of the people of this and other countries, the war will not have been fought in vain. An oil engine and dynamo supplied at cost by the Government and installed to every outlying settlement would be an incalculable boon. The money necessary for this engine and dynamo might be advanced to settlers on terms similar to those by which the grants for clearing the land, farm implements, etc., are now advanced, as in the case of rural credits.

In any case the serious problems that confront the dwellers in the

country must be tackled scientifically, or the rural population will continue flocking to our already overcrowded cities, to check which is one of the most important tasks the Government is face to face with to-day.

Visitors to Canada invariably remark on the size and congestion of our cities, and the vast unpeopled country practically screaming for residents. But even in England where the rural districts are congested there is a continual movement of people from the country into the cities even to the large manufacturing centres where unemployment is acute.

Village community life is being fostered and developed in England through the sheer necessity of the moment, and conditions in Canada are just as urgent.

Social Hygiene

By DR. GORDON BATES

General Secretary, Canadian Social Hygiene Council

HEALTH is, I suppose, the most important end to be achieved by the human race. Physical and mental health must of necessity come only with social health.

The relation between the ills of society and the physical ills that flesh is heir to has been only faintly realized in the past. As a matter of fact there is a vicious circle. Widespread illness and death have effects other than immediate. The effect on industry of inefficiency in the human machine is very striking. Another result is even more significant. Too early death in the individual may mean the cutting off of one only partly trained as a citizen by the state—result waste. Or it may mean robbing a family of its bread winner with the result that the next generation lack the education which they might have obtained. Perhaps they lack even the necessities of life. Often the surroundings—otherwise theirs—which even if ordinary—make all the difference between a life which is happy and devoted to the interests of the community and a life which is at once unhappy and anti-social. The untimely death or even disability of a parent may mean a definite fall in the social scale for the next generation. It may mean insufficient education, long hours of work, crime and in its turn disease and early death. So much for the relation between physical disease and social organization. I go so far as to say that could we abolish all physical disease to-morrow in the presence of a physically normal human race many of the ills of society would disappear. Conversely—could we but reorganize society—a great step would be made towards the abolition of disease.

So much for the preamble to a paper on Social Hygiene. There is a definite relationship between social conditions, the way people live and disease—its presence or absence.

Social Hygiene is a comparatively new term. It has been variously defined as a science—the science of human relationships—and as a condition to be attained—that of normal human relationships—social happiness. There is no doubt that in the minds of many the term stands for a great movement of an essentially new and unique character. Social Hygiene is not Social Service nor is it Social Welfare. These are terms

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which suggest a type of activity which, however praiseworthy, is not necessarily essentially constructive. The difference between Social Hygiene and such effort is much like the difference between preventive and curative medicine. Social Service and Social Welfare movements are both of great value. Social Hygiene aims to make them unnecessary by organizing and educating communities and society in such a way that even organized relief will be relatively unnecessary.

There is no doubt that the Social Hygiene Movement has arisen essentially because of the proven necessity for attacking Venereal Disease. The first step to be taken for the control of Venereal Disease was unquestionably the establishment of facilities for treatment. The creation of over fifty free treatment centres in the Dominion of Canada since 1919, indicates the success of this first stage. The keeping up of public opinion by the formation of a Canadian National Council for Combating Venereal Diseases was a logical second stage. Propaganda and educational work was done by this organization with the result that clinics were better patronized and many end stage results of Venereal Disease prevented by early treatment.

But the problem of Venereal Diseases may be compared to that of malaria in a malaria infected area. Were one to build hospitals where malaria patients could be dosed with quinine one would be proceeding as far as one is justified in establishing Venereal Disease Clinics and letting it go at that. To control malaria one must go into the mosquito infected swamps and destroy the breeding places of the mosquito. So with Venereal Disease. One must understand a multitude of factors which have to do with its spread and recognize the fact that in treating the disease, we are only starting.

The essential factors which have to do with the spread of Venereal Disease are to be found in the faulty organization of society itself. Illicit sexual contact is an anti-social act. The existence of widespread illicit sexual contacts is opposed to the interests of the family, the most important unit in the state and therefore to the interests of the state itself. Both the existence of resultant disease and the existence of illicit contact itself tend to interfere with the stability of the family. Again where family life is not characteristic of a community illicit contact is likely to result. Therefore, even if we start out only with the idea of attacking Venereal Disease we must take steps both in the direction of attacking disease directly and we must also take such measures as seem possible in the direction of protecting the family and encouraging family life. In other words, commencing with a pure disease problem we find that whether we will or no we must solve certain important and fundamental

problems having to do with social organization at the same time as we proceed along medical lines. So from a Venereal Disease control programme we logically evolve a social hygiene programme—a programme, the success of which, will mean much more for the health and happiness of mankind than any simple pure disease control programme could. Without such a complete programme the disease itself cannot be controlled.

How is such a programme to succeed? Recognizing that the fault lies in society itself, recognizing that we are woefully ignorant and that all things are possible we must arrive at an understanding of what we are trying to do, why we are trying to do it and how we are to go about it.

The most justifiable reason for social action or social reform, if you will call it such, will finally be found to be definite damage to mankind which comes about because of the absence of such reforms. A high death rate justifies the organization of measures to lower such death rate and public health activities come into being. The discovery that social factors have a casual relation to the existence of disease—and to some extent this is true of all diseases—justifies a study of how such social factors operate and efforts to adjust, to correct and to prevent having these social factors in mind.

The question of how to go about the tackling of the problems involved is not an easy one. It presupposes not a vague conception of the matter but exact knowledge of a type which can only be obtained by research. Social research should be a new and significant term in the field of Social Hygiene and upon painstaking investigation and the proper recording and utilization of the results of such investigation much good will depend.

The investigating physician and the social worker searching for information in the clinic are of value in so far as the particular case investigated is concerned. They are of infinitely more value if the results of their searchings are properly recorded, tabulated and used to correct the faults which they discover.

With information in our hands as to damage done by disease and the social factors which operate (and we already have a great deal of such information) we are in a position to create machinery which will ensure progress and action in the direction of using the information which we have.

We immediately find that we are confronted with a situation which is the direct result of modern specialization. People generally are interested in their own particular work and the furthering of the interests of public health on their part is for them a somewhat new idea. Again the average individual is utterly uneducated on the facts of the situation

either as to disease or the social and educational factors which are constantly operating.

The type of education which is necessary if we are to eliminate Venereal Diseases and create a condition of Social Hygiene must be operative in the average family. It must be widespread. It must affect the lives and the conduct of the average citizen.

We have got into the habit of thinking that education is a function performed by the schools during school hours. We forget that every influence surrounding a young person has its effect—good or bad—at whatever hour of the day it operates. We can educate the average man to buy polka dot ties by proper advertising. By putting a bad type of literature into the hands of young people we can just as definitely influence conduct.

Home conditions have been said to form the background for the existence of Venereal Disease. Then we must organize to influence home conditions. If we are to achieve anything in this direction a definite scheme must be worked out by which a new type of education must be made available for the people and to make any such scheme effective every possible publicity channel must be utilized. The physician, the church, the school, and most important of all, the parents, need education in order that they may educate.

It is hoped that in the building up of a great national organization (The Canadian Social Hygiene Council) lies the solution of the problem. The name, "Canadian Social Hygiene Council" is only a tag. The reality is a body with a co-ordinating function. The Health Department which must of necessity take the lead has through this scheme the opportunity of uniting forces with every other unit in the community to fight for the normal state of affairs implied by the term "Social Hygiene".

One thing before closing. For such a movement as this to succeed I have suggested that the co-operation of every important unit in the community is essential. Each has a point of view which is the result of experience and must be respected. At this Conference an attempt has been made to have facts as to the existing situation laid before you and at the same time to submit to you the experiences of leaders in various fields with the idea of giving the public some conception of the scope and possibilities of the Social Hygiene Movement.

A perusal of your programme will, I think, convince you that the problems under discussions are fundamental.

Venereal Disease Mortality

Syphilis and Marriage

How to talk to Boys

The Church and Social Hygiene
Labour and Social Hygiene.

These are typical of the subjects on the programme. We could easily go farther and discuss many other problems which cry out for solution. We could here and now cite many pathetic clinic cases in which cure does nothing to prevent similar cases turning up to-morrow. I have in mind the nine hundred cases now on the books of Toronto General Hospital Out-door Venereal Disease Clinic and cannot but think of many individual cases among them. I recall the case of a young girl, only twenty—a physically perfect specimen of humanity who was wheeled into the clinic room a day or so ago—at this early age ruined morally and physically—never to be a mother, never to be a fully effective citizen. She was suffering from both gonorrhoea and syphilis and already a mutilating, sterilizing surgical operation had resulted. This girl was a new-comer from a nearby country village. Lonely and unfitted to cope with the new conditions with which she was faced in a great city, she is one of a type which turns up in Venereal Disease Clinics every day. She has her counterpart in the young man of similar possibilities but similar environment who so often is allowed in early life to drift into situations which mean the wreck of all future happiness.

The protection of our young people then is our task, and it is one which demands organization and team work if we are to achieve anything.

One can only touch the fringe of the subject of Social Hygiene in a brief paper. The subsequent papers to be read at this Conference will, I know, convince you of the necessity for action and at the same time do something to point the direction in which action should develop. You will feel that in such action we must have the co-operation of the physician, the educator, the religious leader, the biologist, (surely essential in a movement towards the normal), the labour leader, the manufacturer, and especially the parent.

A well organized co-operative effort along sane lines should mean better education for all of us in citizenship, in parenthood, in normal social relationships, in how to live.

I commend to you then the Social Hygiene idea. If I am correct in my conception of it we are at the commencement of a great and significant movement. May we all do our part to make it a success.

The Sanitary Inspectors' Association of Canada

A BRIEF OUTLINE OF THE HISTORY OF MEDICINE

By DR. F. C. MIDDLETON, *Department of Public Health, Saskatchewan*

Read before the Regina Branch.

THE wide range of reading necessary in connection with medicine and Public Health gave me the thought that it might perhaps be of interest to you as Public Health men to have placed before you a brief outline of the History of Medicine. The growth and development of preventive medicine, naturally, is what you, as Sanitary Inspectors are especially interested in, but you will see in tracing medicine through a series of upward steps that preventive medicine has always taken a prominent place.

Many names will necessarily appear in this paper and I trust the important part these people have played in bringing medicine to the standard it has to-day reached, will more than justify their appearance. In the time at my disposal, I can only mention the part each man has contributed, thus making the paper not quite so readable as I would otherwise wish it to be.

HISTORY OF MEDICINE

The history of medicine may be conveniently divided into seven periods as follows:

1. *Primitive Medicine, 4000 B.C.-1490 B.C.*

Sometimes known as the Egyptian and Oriental period, when the belief was that the cause of disease was supernatural.

2. *Greek Medicine, 460 B.C.-470 A.D.*

When natural causes were recognized. This Greek influence was shared by the people of Constantinople, Italy and Arabia, and it was during this period that anatomy on the human subject was commenced. All of the literature of this period was later burned.

3. *Medieval Medicine, 476-1453.*

In this period about 1316, Dr. Munderis commenced human dissection in Europe and medicine became more experimental and rational.

4. *Renaissance, 1453-1600.*

This is the newbirth period when physiology first took its place and the structure and function of the body was worked out.

5. *17th and 18th Century Medicine.*

When clinical and anatomical features of disease were determined.

6. *Modern Medicine, 1800.*

During which time the causes of disease were studied.

7. *Preventive Medicine, 1850.*

When medical knowledge in the prevention of disease was applied.

1. *Primitive Medicine*, was entirely religious; Friendly deities were supposed to give health, and demons caused disease. The physician was a priest, the temple a clinic and fees were in the form of offerings. Surgery developed much earlier than medicine, although at that time anatomy was unknown. The earliest medical writing is a papyrus from Egypt B.C. 3500.

Jewish medicine followed the Egyptian style and Hygiene was emphasized at this time.

2. *During the Greek Period, 460 B.C.-476 A.D.*

The natural causes of disease were being recognized and treatment such as rest, baths, massage and psychotherapy were used. The Greeks were well up on personal hygiene. Hippocrates was born in the 5th century, B.C., and was the first to deny the supernatural origin of disease. Health was the proper combination of the four humours,—blood, phlegm, yellow and black bile, and disease was a disturbance of these humours. Hippocrates is the first true clinician, though his treatment was largely expectant. He is known as the "Father of Medicine", as he used the art of clinical inspection and observation. Infection was not recognized and treatments were mainly fresh air, massage, barley water and good water.

Hippocrates' oath is the basis of all medical ethics, and Osler's motto "Experience is fallacious and judgment is difficult", was taken from Hippocrates.

Galen lived in this period (Second century A.D.). He was the founder of experimental medicine. He reviewed anatomy and physiology following the teaching of Hippocrates. He introduced the idea of a directing spirit over the four elements of Hippocrates. He wrote profusely and his writings were taken as gospel until the time of Vesalius, (1490). The writers after Galen for 14 centuries were only compilers. He almost discovered the circulation of the blood during his experiments. Greek medicine was introduced with Greek culture into the Eastern cities under Moslem A.D. 732-1096 by the Nestorian christians, when some additional knowledge of pharmacy was added. The physicians were magicians and astronomers.

A Persian physician of the 9th century described smallpox and wrote an encyclopedia based on Hippocrates and Galen. Hospitals developed during this time at Damascus, Cairo and Bagdad.

3. *Medieval Period, 476 A.D.-1453 A.D.*

These were the dark ages, on account of the Black Death or Bubonic Plague which wiped out 25,000,000 people or practically one quarter of the population in the 14th century. In 1348 quarantine (of 40 days) was started in Italy and ships were not allowed to land until after this period of quarantine. Three Venetian quarantine officers were appointed and this was practically the beginning of Public Health.

4. *Renaissance, 1463-1600 (New Birth).*

At this time the school of Salerno was established. This was a non-religious university founded by the Benedictines and taught classics, philosophy and medicine, more or less in opposition to the church. It took four years to graduate from this school and it was the first to admit women. Human dissection was done and then there was a lapse of 1,000 years before anatomy was started again. Great stress was placed on hygiene and their text, *The (Regime?) of Health* was presented to Robert—Son of William the Conqueror.

Hospitals and Lazarettos were being built and were the best contribution of the church to medicine. Medicine was still confused with magic and the Black art, but surgery improved 1510-1580 under Paré, a French army surgeon, who was surgeon for four successive Kings. He revised the use of ligatures and invented some good surgical instruments. He also wrote an anatomy, had an outstanding personality, was a great teacher, and a constant supporter of the poor.

There were three methods of teaching at this time.

1. German—which was scientific,
2. French—which was dictatory,
3. English—which was bedside.

It was during this period that syphilis is supposed to have been brought to Europe by Columbus and his men, 1495, but Sudohf, one of the greatest authorities on syphilis, thinks it was in Europe before the time of Columbus.

Reading was now becoming popular.

The great men of this age were:—

1. Paracelsus—Chemistry,
2. Vesalius—An Anatomist,
3. Paré—The surgeon of whom we have just spoken.

Paracelsus, 1490-1541, was a Swiss and favoured observation as Hippocrates did. He burnt the text books that were used by the followers of Galen. At first he was considered a quack, but later, 1576, became Professor of Medicine. He wrote about occupational diseases,

mercury and lead poisoning, cleanliness in wounds, symptomatic treatment, and the value of regularity of life. He was, therefore, the founder of modern pharmacology and therapeutics. He recognized tetanus, wound diphtheria and syphilis (primary, secondary) and was first to use mercury in the treatment of syphilis.

Andrew Vesalius, 1514-1564, was a Belgian and the greatest figure in European medicine between the time of Galen and Harvey. He started human dissection in his day and wrote a text book "*De Humani Corporis Fabrica*", which gave to him the title of the "Father of Modern Anatomy".

Seventeenth and Eighteenth Century Period.

The 17th century was the age of individual scientific endeavour and connected with it are such names as, Harvey, Malpighi, and Sydenham.

Harvey was an Englishman, a graduate of Padua, and was surgeon to King James and Charles I. In 1628 he published the results of his findings in connection with circulation of the blood. It was his discovery which started physiology as a science.

Malpighi proved the existence of capillaries and started modern histology.

The microscope was discovered during the 17th century.

Thomas Sydenham (1624-1689) revived the Hippocratic idea of clinical observation of morbid conditions. He relied on bedside teaching and observation and is recognized as the "Father of English Medicine". His medical treatment consisted of fresh air and horseback riding for tuberculosis.

It was in 1665 that the Black Plague visited London and carried off 100,000 people. Three physicians were then appointed for quarantine purposes. The first bill of mortality or first vital statistics was commenced in 1665.

John Howard, 1726-1790, although not a doctor, did a great work in prison and hospital reform, which assisted in preventing much typhus fever.

The 18th century is characterized by much theorizing with elaborate classification of diseases, but original research was almost nil. A number of well known men belong to this period.

Ramazzini, an Italian, was the first to study industrial hygiene.

Frank, wrote a complete work on public hygiene.

Priestly isolated oxygen, nitrogen and CO_2 which made possible the study of respiration.

William Hunter, was a great obstetrician and anatomist.

John Hunter, a brother of the above, was one of the three greatest surgeons, (Paré, Lister, Hunter). He was the founder of Surgical Pathology, by combining pathology, anatomy and physiology. He is well known as a surgeon, teacher, author and collector of curios. He inoculated himself with syphilis, treated aneurysms by tying the artery above, and finally met his death in a fit of temper.

Fothergil described diphtheria sore throat, and wrote on influenza.

Huxham separated the types of fever in typhus and typhoid, named influenza, and wrote on infectious diseases.

Edward Jenner (1749-1823). In 1796 vaccinated an eight year old boy with cow-pox and in 1796 published a report on 23 cases. Jenner's discovery introduced one of the greatest triumphs in the history of medicine, by placing vaccination on a scientific basis. In 1721 Lady Montague had inoculated a person with smallpox pus from another patient.

6. Modern Medicine 1800.

During this period the causes of disease were studied and a number of different schools sprang up.

French School,—

Louis became noteworthy for his research in tuberculosis and he named typhoid fever of which he gave a clinical description, though the disease was still confused with typhus.

Laennec introduced auscultation of the chest and invented the stethoscope, and is said to have started Modern Medicine.

Bretonneau named diphtheria, did the first tracheotomy and distinguished typhus and typhoid fever.

Pinel was founder of psychiatry and introduced humane methods of treating the insane.

Ricord wrote on Venereal diseases, separated syphilis and gonorrhoea and described the three stages of syphilis.

Dublin School,—

Graves, *Stokes* and *Corigan*, were disciples of *Laennec* and introduced physical examination as we understand it to-day.

English School,—

Bright showed the relation of albuminuria to renal dropsy and wrote on nephritis.

Hodgkin wrote on diseases of the spleen.

Murchison investigated typhoid.

German School,—

Schonlein proved favus to be a parasitic disease caused by a fungus.

Skoda classified chest sounds.

Semelweis was a pioneer of obstetrics (clean) and showed puerperal fever to be a dirt disease.

American School,—

O. W. Holmes carried to the United States the idea of *Semelweis* that puerperal fever was a dirt disease.

Gerhard separated typhoid from typhus fever.

The three great stars in Preventive Medicine are: Pasteur, Koch, and Lister.

Louis Pasteur, 1827-1895, is known as the Father of "Preventive Medicine". He was a Frenchman, the son of a tanner, and subsequently became the greatest biological and biochemical genius the world has ever produced.

Before Pasteur's time the theory of spontaneous generation had held sway, although Kircher and Leenwenhock, in the 17th century, had seen living animalcules under the microscope and had suggested that they were the causes of disease. Pasteur started life as a Professor of Mathematics and later of chemistry. This led him to study fermentation, when he found that life could not exist without oxygen. Studies in fermentation formed the basis of his overthrow of the theory of spontaneous generation in 1861. He studied brewing, the silk worm disease, and the methods for the specific prevention of rabies and anthrax. This led to the foundation of the Pasteur Institute, 1888.

He was really the founder of bacteriology and declared that disease came from diseases, thus doing away with the idea of spontaneous disease. He was the pioneer in the theory of preventive inoculation against disease.

Robert Koch, 1843-1910. Born in Hanover and was a country Doctor, but did a great deal with his microscope. In 1876 he described anthrax and sporulation, and developed new cultures. 1877 published method of fixing films and stains. 1878 published Etiology of traumatic infection. 1881 published paper on obtaining pure cultures of organisms by spreading liquid gelatin with meat infusion. 1883 discovered Tubercle bacillus by special cultures and staining, and his paper on this contains Koch's postulates which are:

In order to prove and organism to be the cause of a given disease or lesion, the following conditions must be fulfilled:—

1. The micro-organism in question must appear in the lesion at all times.

Pure cultures must be obtained from it.

3. The cultures must reproduce the disease in animals and pure cultures must be again obtained from the lesions.

Koch also introduced steam sterilization and dry heat. In 1885 he was appointed Professor of Hygiene and bacteriology at the University of Berlin.

In 1890 he introduced tuberculin and in 1905 he received the Nobel prize, which prize just this last year was given to two of our Canadian Doctors, namely, Dr. Banting and Dr. McLeod, for work in connection with Insulin.

Joseph Lister, 1827-1911, an Englishman, was Professor of Surgery at Glasgow, was a distinguished scientist, investigator and scholar and is noted for his theory of germ life, and antiseptic treatment, (used antiseptic carbolyzed dressings).

To Lister is due all modern development of surgery.

Other notable figures in this period were:—

Morton, 1847, a United States dentist to whom is given the credit of first using ether.

Simpson, 1847, of Scotland, who discovered chloroform.

Klebs in 1883 found a constant bacillus in diphtheria.

Loeffleur in 1884 separated this germ.

Emile Roux, 1883, a pupil of Pasteur, discovered diphtheria antitoxin.

Florence Nightingale, 1823-1910, an English lady born in Italy, realized that absolute cleanliness, fresh air, pure water, light, and efficient drainage were the best means of preventing disease. She defined nursing as "Helping the patient to live". Sanitation of hospitals was greatly forwarded by creating this body of nurses.

Ross in 1897 discovered the transmission of malaria by the mosquito.

It was through the efforts of Sir Edward Chadwick that the first Public Health Act was passed in England in 1848. He made a report on the Poor Law reform, and the Public Health Act resulting was more or less in co-operation with the poor laws. Public Hygiene was, therefore, very much advanced as a result of his efforts and following his report, the Burial Act of 1855 was passed.

The latest contribution to medicine is the discovery of Insulin for the treatment of diabetes, in 1922 by Dr. Banting, Dr. McLeod and Mr. Best of Toronto.

Monthly Jottings of Sanitary Inspectors

The minutes of the Annual Meeting of the Saskatchewan Branch make interesting reading. The discussions appear to have covered most of the field of work of our Association.

Three points brought out by the President of the Branch, Mr. A. Wright, in his address were loyalty, confidence, and unselfishness. In referring to the latter, Mr. Wright said, "It is general knowledge applicable to all organizations, that there is a tendency for some to join for what they can get out of it, or if it will be of any help to them to better their positions, and while this in itself may not be any discredit to a member, discredit only exists when a member wants to get the benefits an Association can give him, without himself giving his share of assistance to those he expects to receive from."

It is also true, as Mr. Wright says, that "the members who get most out of an Association are those who put most into it". It will do us all good to remember this.

Mr. J. H. Symons, one of our oldest members in the Saskatchewan Branch has been nominated for Branch President for the ensuing year. We congratulate Mr. Symons on this honour.

The members will join in expressing thanks to Mr. Wright for his painstaking service during his two years as Vice-President for Saskatchewan.

We are also pleased to learn that Mr. A. M. S. Allan was once more re-elected Branch Secretary. The success of the Saskatchewan Branch is due in no small measure to the energy and zeal of Mr. Allan.

We regret to inform the members that Mr. T. Watson of Regina recently suffered a stroke of paralysis. We are certain that our members will all join in wishing our old friend a speedy recovery.

The programme for our Convention is well in hand but we need a few papers in order to complete it. The Secretary will be glad to hear from any member who can help in this way.

If you have any news items of interest please send them along. We are always glad to have these for our jottings.

Owing to the strike of postal employees at Toronto, our Monthly Jottings for last issue were not delivered in time for publication.

The members will be pleased to learn that our esteemed friend, Mr. T. Watson of Regina, is making a splendid recovery.

At the request of the Saskatchewan Branch, an amendment to section 11 of the Constitution and By-laws is being prepared by the Executive. Each member will receive due notice before the Annual Meeting takes place.

The President and Secretary are to prepare the Annual Report of the Association. Will the Branch Presidents and Secretaries please assist by sending theirs in at once?

Mr. W. F. Thornley, Chief Health Inspector, Hamilton, Ontario, one of our Past-Presidents, sends his kind regards to the members. He hopes to be with us at the Annual Convention.

We trust that there will be a large turn-out of the members at the Annual Convention. It will encourage the Ontario members to see a goodly number of Western men; also we have arranged for several outstanding speakers who deserve a good hearing. Please note the place,—Fort William; and the dates,—September 3rd, 4th, and 5th.

The Waiting Shadow

TRANSLATOR'S PREFACE

The following story is selected from a series written by Systir Olafia Johannsdottir, or as we might express her name in English, Sister Olave Johnson. Sister Olafia is an Icclander of Reykjavik, who worked for many years in the slums of Christiania, the Capital of Norway. There she became deeply impressed by the ravages of syphilis, and felt compelled to write an account of the tragedies, which she had personally learnt to know, in order to stir the Norwegian people to do battle with this disease. Her book appeared in 1916 under the title *De Ulykkeligste* (E. H. Wangs Forlag, Fredrikstad). A second edition was called for in 1920. In 1923 she also brought out an edition in Icelandic, under the title *Aumastar Allra*.

The present translation is made, by her kind permission, from the Icelandic, the Dano-Norwegian being used for light on difficult passages.

"The Waiting Shadow" is the most striking of her sketches, and pictures most graphically the mental, as well as the physical, anguish of a victim of the dread disease.

May Sister Olafia's story wake a response in Canada!

C. V. PILCHER.

THE "SISTER'S" STORY

I first met Ruth Olsen in the Ullevaal Hospital. It was then mid-summer. I often visited "The Fourth Wing" and got to know the patients who were isolated there.

Ruth was different to other girls. Her expression was staid and shy. She was not particularly pretty, but sometimes the soul seemed to shed a wonderful beauty over the face. Her appearance was strikingly child-like and innocent. Her eyes were large and ocean-blue; they had a far-away look. Her hair fell in bright waves over her forehead.

For months together I saw her in the hospital, and when she came out we were still more often together. Sometimes we went for long walks out of the city. She loved Nature and hated to be separated from her. I can still see her in imagination as she used to stand and gaze and gaze at the red flowers in the wood—or at some little house which stood off the highway, with a light burning behind white transparent window curtains. She used to picture how those who dwelt there must pass their lives. She hated to drag herself away from what attracted her.

Once I told her that if a woman wanted to be a good mother, she had to keep her body and soul from all that would hurt, because the child inherited the mother's nature; that people ought to value and reverence motherhood and fatherhood above everything on earth. She gave me a long, sad look and then said scarcely audibly, "Why was I never told this before? If only I had heard this, I would never have been in my present condition".

Little by little she opened her heart to me—she began to allow me to share her inner experiences. She was not a girl who wore her heart on her sleeve. She seemed rather to talk to herself, to see things in imagination, to live her life over again. I often had to make a guess in order to be able to follow her. I had to infer one point from another. A few letters and writings which she had kept came into my hands. Afterwards I tried to master this material, and I here set down the result for the benefit of my readers.

She was born up at Westacre in a little red-painted farm with a white fence and small out-buildings. Chickens and a dog played in the yard, while in the garden grew wild roses and pink poppies on their slender stems. Here passed away the first years of her life. Her aunt owned the farm and lived there with her two half-grown-up sons. She had wonderfully clear memories of the little room in which her mother and herself lived. The walls were dark blue. Against the wall stood their bed with its snow-white coverlet. The chairs were of painted wood. Her mother kept them spotlessly clean, and she remembered that they were smooth to touch. The little coffee pot shone like gold. She had often amused herself by standing in front of it and watching the faces which were reflected on its bulging side, faces at all angles, some tremendously broad and fat and others terribly thin and long, but all aslant and askew. They had no family chest, but a locked trunk and a little wardrobe. Everything was wonderfully neatly kept. She could see it all before her in imagination whenever she wanted to—the cups and plates which they ate from, the tin frying-pan on which her mother warmed up the odds and ends of meat, the pots and pans which stood behind the stove, because they had no kitchen. Flower pots stood in the window. She could remember best a Campanula with soft interlacing stems and tiny flowers of a light-blue. Once, when she had almost upset it, her mother said to her: "Be careful, Ruth; I think so much of it. It is the same age as yourself, and I always think of you whenever I water it."

She knew nothing about her father. When she began to grow up she often thought of this, and sometimes wanted to ask her mother about him;

but she never could bring herself to do so, though she could not understand why. Her mother was generally away from home and then her aunt looked after her. When she got big she used to play with the chickens and the cat and the cows. She was most fond of a dog which was owned by another relative of hers. His name was Caro, and he was wonderfully clever.

When she was seven years old her mother had an illness which lasted several weeks. When at length she was able to get up she was weak and unable to do as much work as before. The aunt also was not strong, and so Ruth had to be sent to the Children's Home at Eastacre. After some time her mother moved to Kampen to be nearer to Ruth. Each Sunday she went with Ruth to visit her sister. Ruth was always tremendously keen to go there. Caro, her old friend, knew her when she came. The old cat had had a kitten which was called Lulu. There was nothing else like that kitten. She would not look at milk unless it came straight from the dairy. Sometimes she seemed not to want it, although it was warm from the cow; but if Ruth pretended to give it to Caro, Lulu at once jumped up and looked straight at Ruth, as much as to say, "What are you doing? Don't you know that this is my milk?" and then she began to quickly lap it up. She was treated well at the Children's Home. Everyone was kind to her there.

When Ruth had been confirmed she left the Children's Home and went out to service. Before long she asked her mother's permission to go out by the day and be home with her at night, so as to have more time to herself. Her mother thought it wiser for her to board out at service. In that way one made more money and trained oneself in habits of definite work. It ended, however, by Ruth having her way and coming home. She worked the first part of the day, but was generally free in the latter part.

Two years previously her mother had married a German violinist called Fransel. After that she was more at home. Ruth never got on well with her step-father. He was surly, had a foreign look and was continually gesticulating. When he was in the house her mother was strangely silent and nervous. He knew very little Norse, and they did not understand half of what they said to one another. He often looked angrily at her and muttered something to himself. Then she turned away and busied herself about a piece of work. Ruth never saw him actually drunk, and yet she could never make out what he did with all his money. She once saw him put a fifty dollar bill in his purse, yet two days later her mother had to go out to wash because there was not a bit of food in the house. This occurred shortly after they were married.

She did not often see him with so much money in his hand, but she often knew that he had earned a considerable sum. Then he tidied himself up and went off to town, not returning until the small hours of the morning. Once Ruth asked her mother whether she was not sorry that she had ever married him. A sad look came into her eyes as she answered, "One regrets so many things in life".

When Ruth went home, her mother let her sleep on a camp-bed beside herself in the kitchen. The house accommodation consisted merely of one little room and a kitchen; but everything was spotlessly clean and well looked after. Fransel was well aware of that, and when he was in a good humour he actually said that he had a model wife.

When Ruth came home during the day she used to like to sit and read novels on into the evening. Then she went out with Ragna, who had become her special friend—the first girl friend whom she had had. There were always one or two boys with Ragna. They used to invite the two girls to the 'Movies' and to a restaurant. Ruth quite understood that all this was done for Ragna's sake, and sometimes she felt very lonesome and out of it. One evening she met two girls who had once been with her in the Children's Home. They also had boys with them, who of course gave them a good time. If only she had had a brother to take her about. She felt that the rest looked down upon her because she had no boy. Her mother had often begged her "to be careful and to stay at home in the evening; many young girls got into disgrace and unhappiness because they trusted themselves and others too readily. It was best for young girls to find their pleasure in their work—they would need that all their lives." But who could be contented to sit at home every day and never do anything to amuse oneself while one was young?

About Easter-time a brother of Ragna came from America. His name was Harold. A little later his friend Olaf from Hagi came to visit him. Olaf tried to get work in the city, while Harold was at home, and hoped if possible to go to America with him when he returned. Olaf was not good-looking, and in various ways was different to the city boys. He was long shouldered and his clothes hung about him as though they had not been made to his measure; but still he was extremely kind and sincere. Ruth soon saw that she could twist him round her little finger. She did not care much for him, but she thought it fun to know that he was in love with her. That was something for her companions to inwardly digest. One day she got a letter from him. He spoke of his love and asked whether she would be willing to think of marrying him. He would like to know for certain before he sailed. He would not be in a position to offer her a home for two years. He intended to go to

America to make money. When the time came she could decide whether she would like to join him over there or whether she would prefer for him to come back to Norway. But, however that might be, she should be happy as far as it was in his power to make her so. She need not give her answer at once, but he begged her not to keep him long in uncertainty.

Two days later, when they were alone together, he looked at her with a look of deep affection, took her hand and said, "You'll be my wife, Ruth? Mayn't I hope for that?" She laughed and shook his hand. So the matter was decided. He asked leave to visit her mother. She began to like him.

About a month later Olaf and Harold sailed for America. Ruth had become accustomed to the kindnesses and attention which he continually showed her and at first quite missed him. Soon, however, that feeling passed away. She was, as formerly, often out with Ragna and her friends and it often was very late before she came home. Her mother had for some time been pale looking, and had developed a cough. She often begged Ruth not to come home so late, because she could not sleep before she knew that she was safely in bed. Ruth thought this rather a nuisance of her mother and said that it might be a bother, but that there was nothing wrong in being out a little after dark; the time went so quickly and it was late before one knew it, there was no need for anyone to be disturbed when she slipped in. When her stepfather was at home her mother could not sit up to wait for her, and it often happened that when Ruth opened the kitchen door her mother crept up barefoot to look after her.

CHAPTER II.

Ruth got the idea of going out again to full-time service in order to earn more money. She was now eighteen years old. Her mother implored her only to go out to good people, preferably to some elderly woman where she could learn house-keeping before she had a home of her own. Directly against her mother's wishes Ruth took a position in a restaurant. One of her friends had told her that it was much more sport to work there than in a private house, and Ruth wanted to try this out, though she saw that her mother was troubled by it and was very anxious about her.

In her new place Ruth was always on her feet, waiting at table. There were many waitresses and the house was always full of guests. Things were on the go from morning till evening. The girl who worked with her was called Karen. She was kindly but rather undisciplined.

She frequently suffered from headache and from fainting spells. Ruth slept in a room with one of the kitchen-maids called Johanna. They did not talk much, as both were tired when they came up to bed and went off to sleep at once.

One evening, while they were going to bed, Matilda, the girl who slept in the same room as Karen, burst into the room and turning to Johanna said, "Do you know that Karen has got 'the wicked disease'? She has probably had it for a long time. Isn't that disgusting? I have no intention of staying in the same room with her. You can trust me for that! You have got to keep away from such filth, I tell you." "What do you mean," said Johanna, "are you sure that she has got it?" "Do you think I'd tell you this if I wasn't sure? But I shall see that she goes and insist upon it. If she is not dismissed, I quit the job. I haven't got the slightest intention of working alongside of her".

Ruth began to think about herself working all day beside Karen. "What is this 'wicked disease'?" she asked. "Is it some kind of sickness? I have never heard of it before." "Yes, I have heard people talking about it", said Johanna, "but I have never heard it spoken of before as 'The Wicked Disease', but I know that she means that Karen has Syphilis. Just think! There were three sisters in our village who all died between fifteen and twenty because they had syphilis. They all were born with it. It did not appear while they were young, but as they grew up no one could make out what was the matter with them. One of them was deaf and I can't remember all the horrible things that happened to them. They were all sent in to Christiania and there they learnt what was wrong with them. They all died, so the disease is not only disgusting but deadly." "How did Karen get it?" asked Ruth. "She has probably been with some swine," replied Matilda. "A person must have uncommonly little sense. Anyhow she ought to skip out of here, or she will be infecting the rest of us." Then she rushed out of the room. While Johanna was getting into bed she went on to talk about all she knew of this disgusting disease. You got a running sore and went mad. Almost all the girls of the street had it. She got so far as this and then she went to sleep. Ruth went off to sleep too and dreamt that she had large sores on her feet so that she could not walk. All of a sudden she found herself out in the street in her night-shirt. She did not know what to do. She ran into a house and up a staircase which broke beneath her weight, so that she fell. At that she awoke and remembered what they had been talking about Karen, and immediately fell off to sleep again. The following day she could do nothing but gaze and gaze at Karen and think of what she had heard. She avoided coming near her or talking

to her. It was quite possible for you to get the infection by touching her. The other people in the house avoided her also. A little later Karen left, and Ruth never saw her again. But whenever she met a girl on the street who looked pale and sickly, she wondered whether she had the wicked disease. She was not quite sure what it was but she knew it was something uncommonly ugly and loathesome.

When she went to visit her mother her road lay by Young's Market, Bridge Street, Little Market and Cow's Market. There she met many women who were strangely miserable and sometimes drunk. She wondered that people should let themselves get into such a state.

When Ruth went home to see her mother she always gave her something good. Things never seemed so nice to eat as they were at home with mother, who was always so gentle and kind and thought of nothing else than making her happy while she was there. She looked after all her clothes. She often begged Ruth in a gentle voice to treat her clothes well, to hang them carefully up so that they should look well and wear better. She needed to save money so as to be able to fit herself out when she married. Ruth got tired of all this advice and often answered crossly. But when the hard cough seized her mother, all at once she felt a wonderful affection for her, and begged her to go to a doctor and get some medicine. But her mother smiled a patient smile and said, "I am afraid he would not do me much good."

Olaf kept on writing regularly, but she found less and less time to answer him. He complained of her silence and begged her to write more often. He began to be afraid that she did not love him. He spoke so much of his love to her that she began to pay it no attention. There hung his photograph, always the same good-tempered face. Little by little she forgot to look at it.

One day a guest came to the restaurant and ordered dinner. He looked at her in a strikingly gentlemanly way and said "Thank you". He returned on the two following days, went straight to her table and gave her his order. His voice was so strangely cordial and courteous that she could do nothing but gaze at him. She thought she had never seen such a good-looking and accomplished man. His clothes fell as though they had been cut and pressed for his figure. He always had a bag in his hand and so she guessed that he was a salesman. Once he forgot to pick up an envelope from the table. It was addressed to "Petersen, Esq., Salesman". He came on three days of the week; sometimes twice a day—generally at a time when there were not many people about, and almost always she waited on him. Generally he sat in the inner dining-room in a corner. He did not hold long conversations with her, but his whole

manner towards her was so thoughtful and considerate. Sometimes he looked at her so long and with such an expression that she blushed and slipped away. He asked her once whether she lived in Christiania, whether her parents lived there, whether she had ever been out of the city, whether she would not like to take a trip to Drammen or some other short run. As a rule she did not answer him. Once, when he had finished dinner, he took out a little case in which lay a ring with a red stone. "Will you accept this from me? It would suit you well—though, in fact, everything suits you well." She did not know what she ought to do, but he looked at her with longing, laid the case on the table, and went out quietly. She was strangely happy and yet disturbed. A little later she rushed up to her room and put the ring on. In a moment the memory flashed upon her of how Olaf had taken her hand the evening when they became engaged. She became still more disturbed, but pulled herself together at once. She could not, however, feel at ease. Then it occurred to her that Olaf and she had nothing in common. She would never make him happy. Then the image of Petersen arose before her mind, and all the rest of the day she could think of nothing but him, and how long the time seemed before she would see him again. On Tuesday he came. He spoke in a lower voice than usual, looked at her and said, "Isn't this your day off, Ruth?" Before he had always called her "Miss". "Yes! but what about that?" she could not keep her voice steady. "I shall have finished my work at six. May I invite you to come with me to the circus?" "My mother is probably expecting me." "Your mother can always enjoy your company"—she thought a look of lonely longing swept over his face as he said this. "You will be with me this evening! Don't say 'no'. I shall wait for you at the corner of Oak Market on the right side." His voice became suddenly firm and commanding. He left the restaurant.

At six o'clock she stood at the corner of Oak Market. A little later she saw him coming. She thought she noticed a feeble smile, the first moment when he saw that she was there, a contraction of the lips at one side of the mouth, but he gave her his hand cordially, and they started on their way. They went to the circus. He kept giving her fruits and candies. Afterwards they went together through the palace gardens and down Christian Augustus Street. He told her that the first time he had seen her he realized how lovable she was. He had wanted to be able to talk to her at leisure, but that was impossible with people continually coming and going. When they reached the village he said that he was so tired and hungry that he wanted to go somewhere and get something to eat. He thought of engaging a room for themselves where they could

talk undisturbed. He went into the hotel and asked her to wait for a moment while he engaged the room and ordered dinner. She stood and waited. A vague idea came over her that this was not quite as it should be, but she was so madly in love with him.

They were shown into a room and after a moment of two a maid came in with the dinner, and with bottles of ale and sherry. He handed her two bills and told her that she need not trouble to return until he rang for her. Ruth had no idea that things were so expensive, but afterwards it dawned upon her what a knowing look he had given the maid as he handed her the money.

He kept on pressing Ruth to eat well and to drink a little with her food. His conversation was incessant. When they had finished dinner she asked how late it was. A vague feeling of danger stole over her; she was not quite happy; something troubled her. He told her not to worry; she had the key of her home and could let herself in whenever she wanted to. He urged her to drink a glass of wine with him before they parted. It was impossible to say when they would meet again. "No," she answered, "but it has got so late." "I thought you loved me, Ruth?" He drew her to himself

They stood outside in the cold night air. "I am afraid I must go straight home because I have to catch the first train to-morrow morning. Pardon me if I do not take you home." He raised his hat and passed quickly up the street. She stood still as in a dream. Two drunken men came and accosted her. She suddenly came to herself and started at once on her way and walked slowly, slowly till she found herself in her room. All at once the image of her mother came to her and vanished. Her thoughts whirled as in a dense cloud of fog. The following Sunday evening she was free and visited her mother. She asked her why she had not come on Tuesday. Ruth answered that she had been tired and gone to bed early. "Be careful, Ruth, and keep your health", said her mother in a pleading voice, "it is your only wealth."

Continued next issue.

News Notes

On May 20th, the International Health Board of the Rockefeller Foundation approved of a proposal to assist financially in the creation and endowment of a School of Hygiene in the University of Toronto; and the following day the Rockefeller Foundation pledged \$650,000 to the Governors of the University of Toronto, for this purpose. The Governors of the University have accepted the proposals and the above-mentioned sum will be utilized to provide a building to cost not more than \$400,000 the remaining \$250,000 will be used for the endowment of the School. While final details of organization remain to be perfected, the School will include the Departments of Hygiene and Preventive Medicine and Public Health Nursing and the Connaught Laboratories. The operating or public-service divisions (namely, the Antitoxin and Insulin) of the Connaught Laboratories will be merged and constitute a public service section in the School.

The endowment will be added to by the inclusion of the resources of these Laboratories, namely, the Connaught Laboratories Research Fund. The Governors of the University have agreed to maintain the building and continue to sustain the budgets appropriated for 1924-25, for the maintenance of the teaching Departments of Hygiene and Preventive Medicine and Public Health Nursing.

A further statement dealing with the organization of the School will be made at a later date.

Mr. Alex. R. White, Chief Sanitary Inspector of Ontario, is at present visiting the St. Maurice River Valley, Quebec, and is studying public health activities among the lumber camps and paper mills of the Province of Quebec.

Benzol poisoning in the rubber industry in Ontario seems to be somewhat prevalent at the present time judging by the number of cases reported. The Division of Industrial Hygiene of the Provincial Board of Health, Ontario, is investigating cases with a view to impress on the employers the dangers to health resulting from the use of benzol in certain industries.

The sanitation of motor parking camps in Ontario, as provided by many municipalities for the use of tourists, is not all that it should be, especially regarding a safe water supply for drinking purposes and adequate sanitary arrangements in general. The Engineering

Division of the Provincial Board of Health, Ontario, is making a survey of these camps with a view to improving conditions for the convenience of the motoring public.

Alexandria, Ontario, is having a "Health Week" from August 11th to 16th. Every activity of the Provincial Board of Health is being represented at the demonstration, and all local agencies, such as churches, societies, brotherhoods and private individuals are doing their share to make the Health Week something unique and long to be remembered in that section of the Province. The health of the expectant mother and the feeding and care of babies and children will be given special consideration, but general public health work will be included.

The "week" is being held under the auspices of the local physicians and dentists, who are putting a good deal of personal effort and enthusiasm into the work. The Red Cross is giving financial assistance and lending their co-operation. A public meeting will be held every night at which prominent speakers will take part. Shop windows will also display posters and signs on various health topics. Complete particulars of this "Health Week" will be given readers of the PUBLIC HEALTH JOURNAL at a later date.

The National Annual Social Hygiene Conference for 1924 is being held in Cincinnati, Ohio, November 19-22. Representative Canadian Social Hygienists at the Conference will be welcome.

Dr. A. H. Desloges of Montreal is to represent Canada at the forty-day League of Nations Convention to deal with matters of health organization, August 10th to September 20th. He will also act as the official representative of the Canadian Social Hygiene Council and of the Canadian National Committee for Mental Hygiene. As Medical Director of the Insane Asylums, Prisons and Reformatories of Quebec, and as Chief of the Venereal Disease Control Department of Public Health, he has been chosen by the Dominion Government as one well-fitted to speak for the Dominion at this world conference, where he will report on what has been done in Canada to combat venereal diseases, tuberculosis and drug addiction. He will also present general health statistics for Canada.

The Eleventh National Recreation Congress of America convenes this year in Atlantic City, October 16th to 21.

Social Background

DEPARTMENT FOR UNMARRIED MOTHERS

NEIGHBORHOOD WORKERS' ASSOCIATION, TORONTO

Report for Year ending April 30, 1924

The Department advises and helps unmarried mothers. This help varies, and includes financial help; legal and medical advice; securing a position for the mother, a boarding home for the baby; and effecting a reconciliation between the girl and her relatives. Possibly the best service given is that so many of the girls feel that they have a friend to whom they may come with their troubles and receive a sympathetic hearing. Securing maintenance from the putative father is now the task of the Provincial Officer.

Continued from previous year	116
New	123
Re-opened	2
Total	241
<hr/>	
Closed	110

Total in charge at end of year 131

Of the Women Assisted:

- 56% were Canadian.
- 32% were not residents of Toronto.
- 35% were between 21 and 25 years of age.
- 33% were over 25 years of age.
- 43% were domestics.
- 22% were factory workers.
- 16% were diagnosed defective.
- 27% were suspected mental defectives.
- 19% had previous illegitimate children.

Disposition of Woman during Nursing Period

- 46% with relatives or friends.
- 24% in institutions.
- 11% married.

Disposition of Woman after Nursing Period

- 40% with relatives or friends.

16% in institutions.

8% married.

Assistance was obtained in:

7% of cases by court order.

14% of cases by agreement.

12% of cases by adjustment between man and woman.

19% are awaiting settlement.

48% lacked sufficient evidence for action to be taken.

Lump sums were paid in 52 cases—the amount varied from \$100 to \$1000.

Weekly payments of from \$3 to \$8 were made in 42 cases.

DISTRICT ORGANIZATIONS

NEIGHBORHOOD WORKERS' ASSOCIATION, TORONTO

The City is mapped out into nine districts each with its own local association of workers, which meet to consider ways of uniting action on problems found in the course of the work done by each organization. These local associations appoint representatives to the Central Neighborhood Workers' Association Council, which takes under its survey the whole field of social work in Toronto, and upon which rests the responsibility of suggesting ways of social action.

Yorkville—President, Dr. E. A. Henry, 112 Lauder Avenue; Secretary, Miss V. Pearce, 139 Essex Street; District Secretary, Miss P. A. Anderson, 135 Davenport Road.

Hillcrest—President, Rev. R. G. Quiggan, 848 Rushton Road; Secretary, Mr. F. Graham, St. Clair Y.M.C.A.; District Secretary, Miss H. Shepherd, 674 Markham Street.

Parkdale—President, Rev. F. L. Minehan, 266 Roncesvalles Avenue; Secretary, Mrs. M. H. Kerr, 23 Marian Street; District Secretary, Miss M. MacAulay, 31 Claremont Street.

Broadview—President, Mrs. George Stronach, 26 Browning Avenue; Secretary, Mr. G. McKinnon, Big Brother Movement; District Secretary, Miss M. V. Curley, 126 Pape Avenue.

Scarboro—President, Rev. G. Purchase, 107 Lea Avenue; Secretary, Mrs. E. Jeffrey, 17 Bungalow Road, Rivercourt; District Secretary, Mrs. M. P. Chaffee, 97 Main Street.

Runnymede—President, Rev. T. L. McKerroll, 19 Law Street; Secretary, Miss D. Colbeck, 142 St. Johns St.; District Secretary, Miss M. Smith, 354 Keele Street.

Moss Park—President, Rev. H. M. Pearson, 52 Amelia Street; Sec-

retary, Miss Ruth Roberts, Big Sisters' Association; District Secretary, Miss N. Lea, 139 Jarvis Street.

University—President, Mr. R. C. Thomas, 67 Bellevue Place; Secretary, Mr. B. W. Heise, Big Brother Movement; District Secretary, Miss N. Touchburn, 165 Elizabeth Street.

REPORT OF NOMINATING COMMITTEE—OFFICERS AND DIRECTORS

NEIGHBORHOOD WORKERS' ASSOCIATION, 1924-25

Honorary President.....	Rev. Peter Bryce
President	Rev. George Purchase
First Vice-President.....	Rev. Canon Lawrence Skey
Second Vice-President.....	Mrs. George Dunbar
Treasurer.....	Mr. W. H. Carruthers
General Secretary.....	Mr. F. N. Stapleford

DIRECTORS

Mr. Quartus B. Henderson, Chairman, Board of Directors

Rev. C. T. Scott

Mrs. J. MacIntyre

Rev. H. M. Pearson

Rev. Joseph Haley

Mr. Fraser Raney

Mr. George Stronach

Mr. A. E. Hatch

Mr. Walter Davidson

Mr. W. F. Sparling

Mr. W. Mansell

Mr. H. Stephens



The Provincial Board of Health of Ontario

Communicable Diseases reported for the Province for the Month of
June, 1924

COMPARATIVE TABLE

Diseases	Cases-Deaths		Cases-Deaths	
	June, 1924		June, 1923	
Cerebro-Spinal-Meningitis	9	5	3	3
Chancroid	3	....	1	....
Chicken Pox	265	....	*....	....
Diphtheria	227	12	203	22
Encephalitis Lethargica	1	1	*....	....
Gonorrhoea	132	....	174	....
Influenza	9	6	....	13
German Measles	150	....	*....	....
Measles	4321	12	2149	14
Mumps	729	....	*....	....
Pneumonia .....	....	149	....	150
Scarlet Fever	510	14	280	20
Small-Pox	24	....	13	....
Syphilis	96	....	166	....
Tuberculosis	162	89	188	147
Typhoid	47	1	40	11
Whooping Cough	104	3	199	19
Goitre	1	1	*....	....

*Not reported in 1923.

The following Municipalities reported Small-Pox: Chatham 9 cases, Essex Border 2, North Bay 3, Pembroke 8, Dilk Tp. 2.

JOHN W. McCULLOUGH,
Chief Officer of Health.

Editorial

THE VENEREAL DISEASE GRANT

As the Journal goes to press word comes that the Dominion Government health estimates were submitted on the last night during which Parliament sat and that as had been anticipated the sum of one hundred and fifty thousand dollars was voted for the control of venereal diseases instead of two hundred thousand, the sum voted in previous years. The Public Health Journal has already given voice to its opposition to any let up in the campaign against venereal diseases and can only reiterate the opinion that the Government action is not in the interest either of its own Department of Health or of the welfare of the Dominion. Until further word comes as to the policy to be pursued by the Government in the future, it would be unwise to add anything to this opinion. It is to be regretted, however, that an important matter such as this could not be placed before the members of the House at a time when it could be fully discussed rather than in the last hours of the session amid a mass of other subjects, none of which received the attention which they deserved.

GOLF

ALL WORK AND NO PLAY MAKES JACK A DULL BOY

It little profits that a man should spend all his time at golf and neglect his business. This, the theme of an address by Sir Joseph Flavelle at a bond dealers' meeting in Toronto recently, attracted a good deal of attention—as well it might. Great interests are involved—those of the machinery of commerce and those of the world's greatest game as any devotee will assure you. Sir George Foster's contribution is said to have been, "If you must play golf, play it a little," or words to that effect. Whereupon the devotees reply that Sir George evidently knows very little about the game.

Times are changing. Conditions, standards, customs, points of view are changing, too. There was a time not so long ago when the business man looked forward to a life of bonds, cheques, bills of exchange, commercial struggles and triumphs or failures to the end of his life—and not much more. The Harrimans, the Morgans and

the Carnegies were men whose time for pleasure was put off year by year (if indeed mere recreation was anticipated with any degree of pleasure) until there was no time left for it this side of the grave. Even Mr. Rockefeller apparently has learned to play late in life, although his daily golf game would appear to signify that he has learned well.

Nowadays there has been a slackening up. People generally have more time for play because the struggle for existence is not so strenuous and as there comes more time for play, so the advantages of play must become more obvious not only to the individual, but to business itself. The browned cheek, the clear eye and the springy step of the golfer are indicative of physical and mental health. Multiplied thousands of times in the golfers of the Dominion, the result upon the carrying on of business must be significant.

Another thing not to be forgotten is the influence of the game on men's character. The Battle of Waterloo was won on the cricket fields of Eaton, said the Duke of Wellington. There, too, was born British sportsmanship and fair play. On our Canadian golf courses and football fields, too, there is the birthplace not only of health, but of a spirit which, entering into business life, makes for all that is good. Health, character, the development of a normal man—these are what one gets from a game like golf. Despite Sir Joseph's remarks, we could ill do without it.
